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PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

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925/PCT

International filing date:

05 May 2000 (05.05.00)

Priority date:

11 May 1999 (11.05.99)

Applicant:

FOLKESSON, Jan

1. The designated Office is hereby notified of its election made:



in the demand filed with the International preliminary Examining Authority on:

28 September 2000 (28.09.00)



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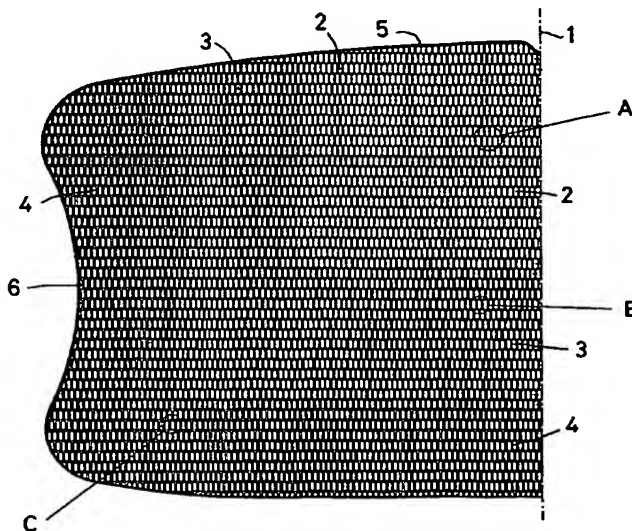
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Published:

— With international search report.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SAFETY VISOR



(57) Abstract: A safety visor is produced by etching of metal and comprises a grid which defines a large number of light-permeating holes (7, 8, 9). The safety visor has at least two zones (2, 3, 4) where the holes (7, 8, 9) are of different areas and/or configuration. An upper central zone (2) has greater light transmission than the remaining zones (2, 4) of the safety visor. The C-C spacing for the holes (7, 8, 9) is constant in both the vertical and lateral directions regardless of in which region of the safety visor the holes (7, 8, 9) are located. In one preferred embodiment, the holes (7, 8, 9) are hexagonal with two approximately parallel sides which are longer than the remaining sides and are directed in the vertical direction of the safety visor.

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SAFETY VISOR

TECHNICAL FIELD

- 5 The present invention relates to a safety visor which is produced by etching of metal and which comprises a grid defining a large number of light-permeable holes.

BACKGROUND ART

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Safety visors for use primarily within forestry are previously known in numerous variations and designs.

- As its name suggests, a safety visor is intended to protect the wearer's face, but
15 above all eyes without obscuring the wearer's view to any appreciable degree. There are essentially two risk factors which the safety visor is to reduce or preferably wholly eliminate. First, the safety visor is to keep out flying matter such as dust, sawdust and the like. Secondly, the safety visor must protect against
20 penetration by sharp objects such as small branches, twigs etc. Flying foreign matter often enters obliquely from beneath, while, on the other hand, sharp objects can come from any direction whatever.

- There are previously known in the art safety visors which consist of sparsely woven metal wire. Such safety visors can provide adequate protection against
25 flying foreign matter if the mesh is suitably small, but on the other hand, protection against penetration by pointed or sharp objects is considerably poorer, since the individual wires in the safety visor slide in relation to each other.

- It is also previously known in the art to produce safety visors by the application of
30 an etching process on sheet metal.

Regardless of whether the safety visor is etched or woven in metal, it naturally obstructs the view of the wearer more or less seriously. In order to obviate this

problem, for example EP 689 812 calls for the manufacture of safety visors from two different materials with a central region of the visor formed from a transparent view plate while the peripheral parts consist of woven metal mesh.

- 5 The transparent view plate affords a good view as long as it is new, but is rapidly scratched and as a result deteriorates in quality. Further, a view plate of the type employed here often causes problems by misting over.

PROBLEM STRUCTURE

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The present invention has for its object to design the safety visor intimated by way of introduction such that the drawbacks inherent in prior art technology are obviated. In particular, the present invention has for its object to realise a visor which gives maximum unobstructed view within the sectors where this is most
15 important without, to that end, any deterioration taking place in the mechanical strength or any appreciable increase in permeability to flying objects.

SOLUTION

- 20 The object forming the basis of the present invention will be attained if the safety visor intimated by way of introduction is characterised in that it has at least two regions where the holes are of different areas and/or configuration.

- As a result of this feature, the safety visor can be given a central zone, preferably
25 located in the middle of the visor and at its upper region, where the light transmission is greater than in the rest of the visor. Below and to the sides of this zone, the safety visor displays zones with less light transmission and, as a result, improved mechanical strength and increased protection against flying objects.

30 BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

The present invention will now be described in greater detail hereinbelow, with reference to the accompanying Drawings. In the accompanying Drawings:

Fig. 1 shows the left-hand half of a visor designed according to the present invention; and

Fig. 2 shows various part-magnifications A-C of different zones in the safety visor in Fig. 1.

DESCRIPTION OF PREFERRED EMBODIMENT

In Fig. 1, the ghosted line 1 shows a vertical centre line of a visor according to the present invention. This implies that the illustrated part of the visor is the left-hand half of the visor and consequently that the visor has a right-hand half which is a mirror reflection of the illustrated half.

The visor is manufactured by an etching process in suitable sheet material, for example stainless steel. As a result of the etching process, certain parts of the original sheet material are removed so that a grid is left which defines or delimits a large number of light-permeating holes in the visor.

The visor is designed with an upper central zone 2 with a light permeability or light transmission capability of approx. 80%. This upper central zone extends from the upper edge 5 of the visor and downwards to approximately half of the height of the visor. In the lateral direction, it covers approximately half of the width of the visor. In the illustrated embodiment, the upper central zone is approximately rectangular in configuration, but may also have more rounded-off shape.

Below and to the sides of the upper central zone, there is an intermediate zone 3 with a light transmission capability of approx. 70%. At the centre line 1 of the visor, this intermediate zone has a height of the order of magnitude of 1/4 of the total height of the visor. Further, it extends from the vertical side edges of the upper central zone approximately half way out towards the side edges 6 of the visor.

The remaining zone of the visor, i.e. its side edge regions and lower region form a lower edge zone 4 with a transmission capability for light of the order of approx. 60%.

- 5 A large light transmission capability as in the upper central zone 2 however entails that the remaining material in the grid is only 20% of the total surface. It follows from this that a region of the visor with such a high transmission capability can be mechanically weaker than that which applies to the lower edge zone with a light transmission capability of the order of 60% where the grid
10 constitutes 40% of the original sheet material.

By placing the different zones 2, 3 and 4 of the visor in the above-described manner in relation to one another, there will be obtained a central view area with a superior light transmission capability and lower and side areas with above all
15 great mechanical strength and affording good protection against flying objects and penetration.

Fig. 2 shows detail magnifications of the areas A, B and C shown in Fig. 1. It will be apparent from Fig. 2 that the holes in the different zones 2, 3 and 4,
20 respectively of the visor have the same shape but different sizes. This is achieved in that the holes 7, 8 and 9 have the same distance centre to centre in both the horizontal and vertical directions. The result will be that the bars included in the grid which, thus, are left in place on etching of the original sheet material, are of different widths in the alternatives A, B and C.

25 It will further be apparent from Fig. 2 that the holes 7, 8 and 9 are all hexagonal in configuration with considerably shorter extent in the horizontal direction than in the vertical direction. As a result, the holes are tall and narrow, which has proved to afford major advantages by a reduction in reflection. This form also entails that
30 randomly shaped particles which hit the visor with random orientation have a considerably smaller chance of passing through the holes in the same size ratio between the particles and the holes than would be the case if the holes had had the

same lateral extent as vertical extent while retaining surface area, i.e. the same degree of transmission.

- 5 In part figure A in Fig. 2, in the illustrated embodiment the hole 7 has a total vertical extent of 4.0 mm and a total width of 1.5 mm. The corresponding values for Fig. B are 3.82 mm and 1.38 mm. In alternative C, the height is 3.65 mm while the width is 1.25 mm. The width of the grid bars defining the holes is, in alternative A 0.25 mm, in alternative B 0.38 mm and in alternative C 0.5 mm.
- 10 The above-described design and construction of the grid and the holes 7, 8 and 9 lacks irregularities in the grid, for which reason it need not be feared that the grid zones with different transmission capabilities do not "fit together" in the interface area. Further, the above-described construction entails that the borderline between the zones of different transmission capabilities may be formed in principle in any
- 15 optional manner.

WHAT IS CLAIMED IS:

1. A safety visor produced by etching of metal, comprising a grid which defines a large number of light-permeating holes (7, 8, 9), **characterised in that** the safety visor has at least two zones (2, 3, 4) where the holes (7, 8, 9) are of different areas and/or configuration.
2. The safety visor as claimed in Claim 1, **characterised in that** it has an upper central zone (2) with greater light transmission than the remaining zones of the safety visor.
3. The safety visor as claimed in Claim 1, **characterised in that** it has an upper central zone (2), an intermediate zone (3) located around the upper central zone and a lower edge zone (4) located around this; and that the light transmission in the upper central zone is greater than in the intermediate zone where the light transmission is greater than in the edge zone.
4. The safety visor as claimed in any of Claims 1 to 3, **characterised in that** the holes (7, 8, 9) have the same C-C spacing in the lateral direction regardless of where in the safety visor they are located.
5. The safety visor as claimed in any of Claims 1 to 4, **characterised in that** the holes (7, 8, 9) have the same C-C spacing in the vertical direction regardless of where in the safety visor they are located.
6. The safety visor as claimed in any of Claims 1 to 5, **characterised in that** the holes are hexagonal with two approximately parallel sides longer than the remaining sides, the parallel sides being directed in the vertical direction of the safety visor.

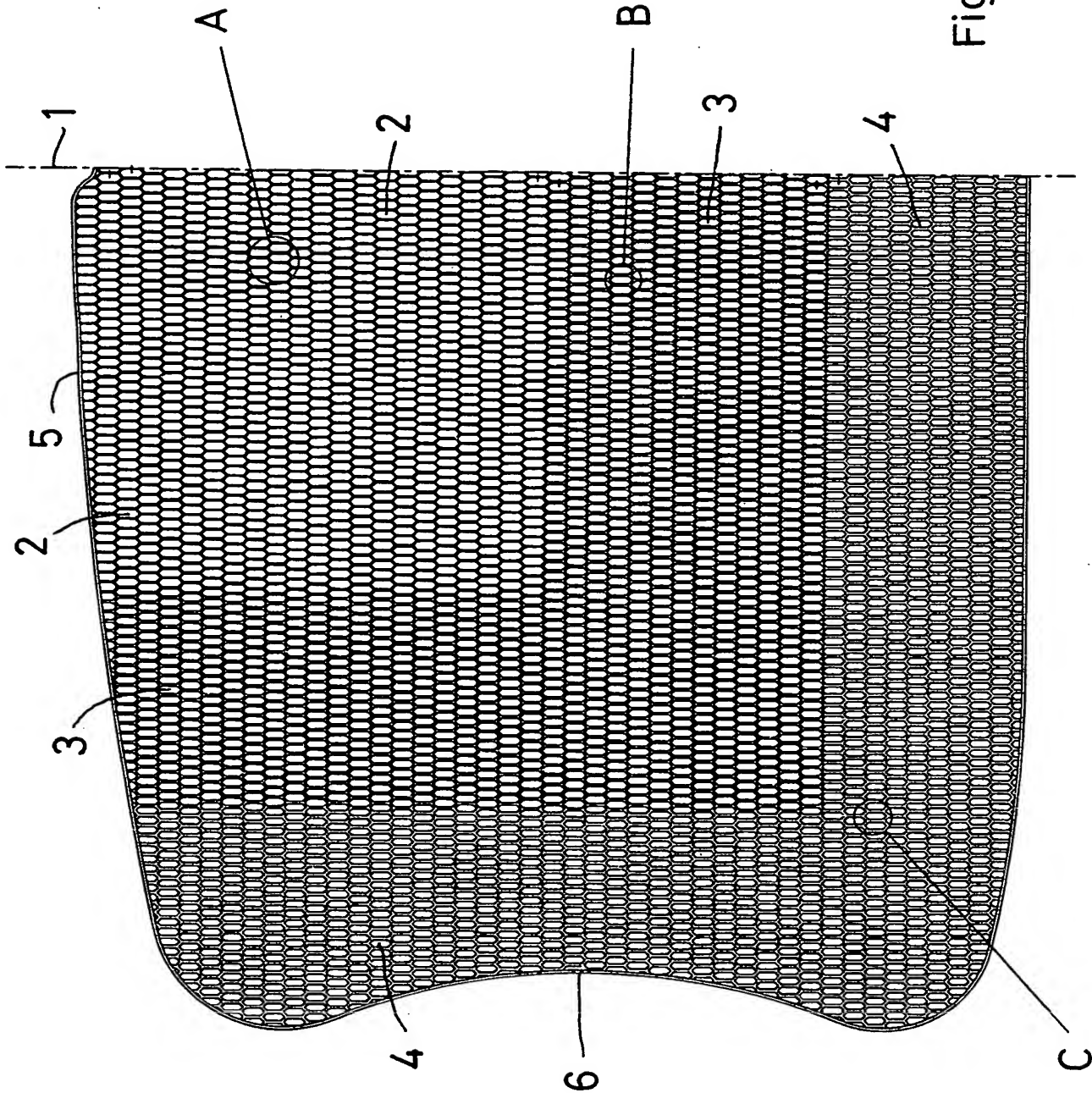


Fig 1

2/2

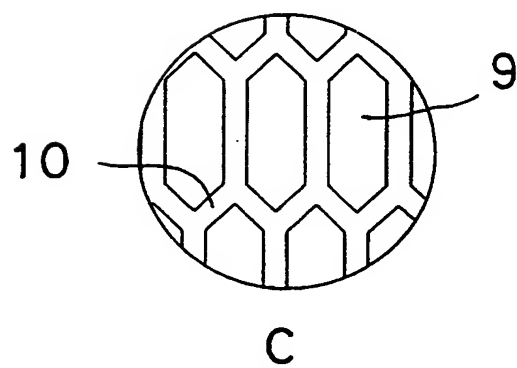
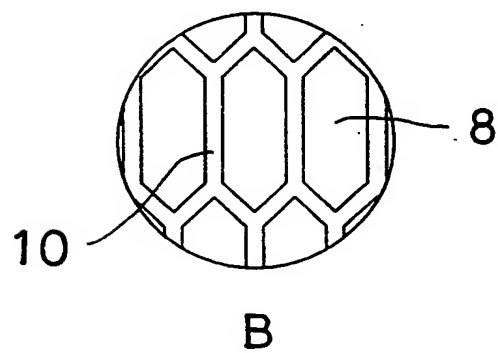
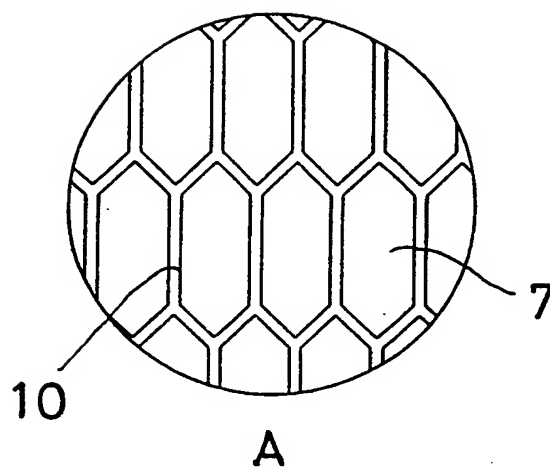


Fig 2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/00892

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A42B 3/22, A61F 9/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: A42B, A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 1959915 A (C.C. GUTHRIE), 22 May 1934 (22.05.34), page 2, line 36 - line 48; page 4, line 84 - line 92, figure 1, claim 1 --	1-6
X	FR 826990 A (A. ABPLANALP), 13 April 1938 (13.04.38), page 1, line 20 - line 50; page 2, line 22 - line 39 --	1,4-5
A	SE 506057 C2 (PELTOR AB), 3 November 1997 (03.11.97), figures 1-3, abstract --	1-6
A	EP 0689812 A2 (UVEX WINTER OPTIK GMBH), 3 January 1996 (03.01.96), the whole document --	1-6

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

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Date of the actual completion of the international search

23 August 2000

Date of mailing of the international search report

05 -09- 2000

Name and mailing address of the ISA:

Swedish Patent Office

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Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/00892

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SE 454237 B (ANDERZON INVEST AB), 18 April 1988 (18.04.88), the whole document --	1-6
A	US 5640711 A (Y. LEFORT ET AL), 24 June 1997 (24.06.97), abstract -- -----	2-3

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/SE 00/00892

Patent document cited in search report			Publication date	Patent family member(s)			Publication date
US	1959915	A	22/05/34	NONE			
FR	826990	A	13/04/38	NONE			
SE	506057	C2	03/11/97	AU	5785996	A	29/11/96
				CA	2247181	A	28/08/97
				EP	0842218	A	20/05/98
				NO	974981	A	29/10/97
				NO	983682	A	19/10/98
				PL	323357	A	30/03/98
				SE	9600642	A	22/08/97
				WO	9730606	A	28/08/97
EP	0689812	A2	03/01/96	AU	2179295	A	18/01/96
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				NO	872569	A	04/01/88
				SE	8602956	A	04/01/88
				US	4831665	A	23/05/89
US	5640711	A	24/06/97	CA	2137619	A	11/06/95
				DE	69418434	D,T	07/10/99
				EP	0657111	A,B	14/06/95
				SE	0657111	T3	
				ES	2132360	T	16/08/99
				FR	2713449	A,B	16/06/95
				IL	111726	A	10/06/97
				JP	7267194	A	17/10/95

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REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

PCT/SE 00 / 0 0 8 9 2	
International Application No.	
0 5 -05- 2000	
International Filing Date	
Name of receiving Office: The Swedish Patent Office PCT/RO/101 and PCT/RO/101 Application	
Applicant's or agent's file reference (if desired) (12 characters maximum) 925/PCT	

Box No. I TITLE OF INVENTION	
Safety Visor	
Box No. II APPLICANT	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
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<input type="checkbox"/> This person is also inventor.	
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This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
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FOLKESSON, Jan N. Övergången 10 331 35 VARNAMO /Sweden	
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SUBSTITUTE SHEET

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05-05-2000


Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application: regional Office	international application: receiving Office
item (1) 11 May 1999	9901732-9	Sweden		
item (2)				
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): 1

* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY			
Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):		Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):	
ISA / SE	Date (day/month/year) 11 May 1999	Number SE 99/00594	Country (or regional Office) Sweden

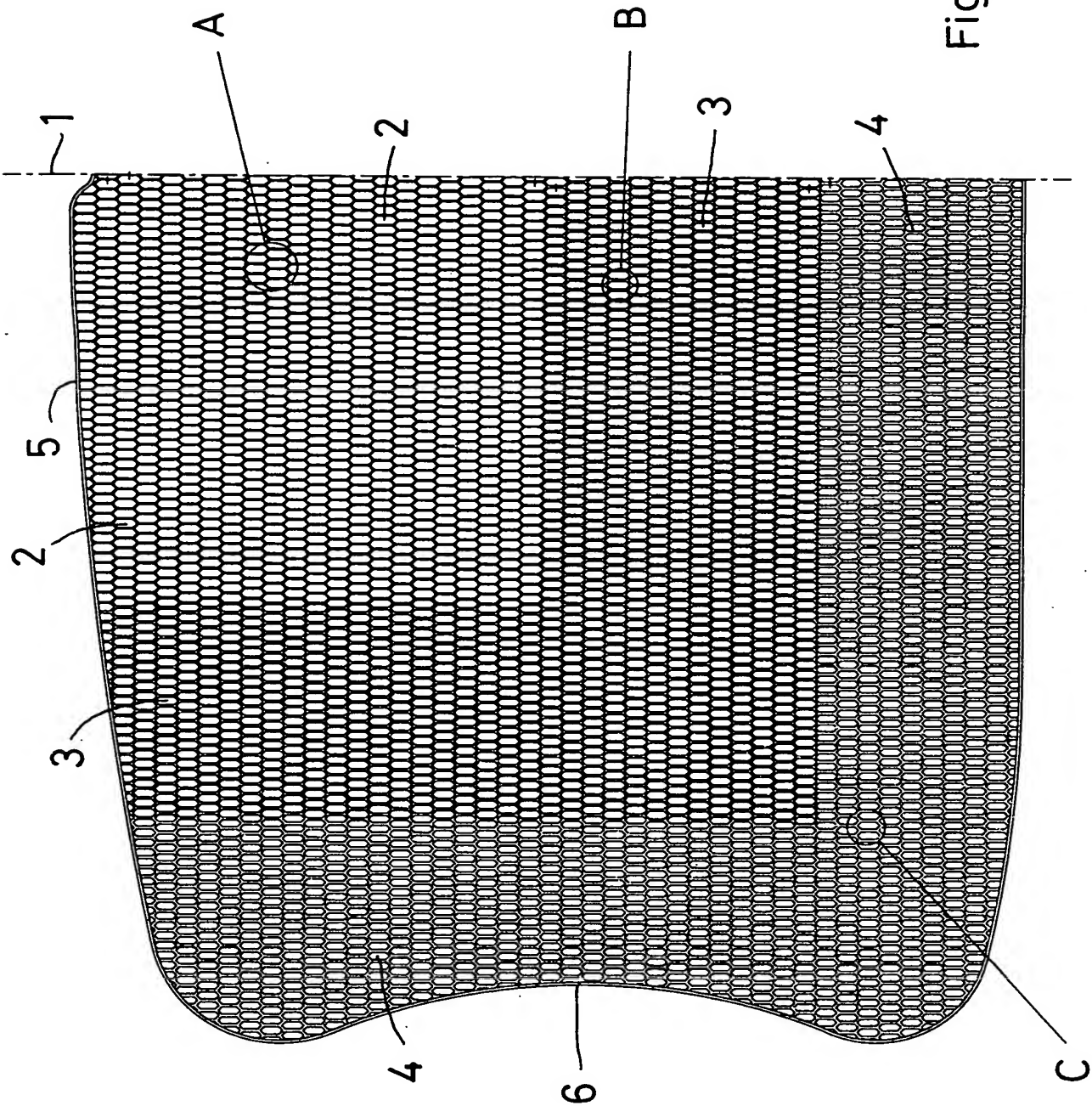
Box No. VIII CHECK LIST; LANGUAGE OF FILING	
This international application contains the following number of sheets: request : 3 ✓ description (excluding sequence listing part) : 4 ✓ claims : 1 ✓ abstract : 1 ✓ drawings : 2 ✓ sequence listing part of description : _____ Total number of sheets : 11	This international application is accompanied by the item(s) marked below: 1. <input checked="" type="checkbox"/> fee calculation sheet 2. <input type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input checked="" type="checkbox"/> other (specify): ITS-report
Figure of the drawings which should accompany the abstract: 1	Language of filing of the international application: Swedish

Box No. IX SIGNATURE OF APPLICANT OR AGENT	
<i>Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).</i>	
Värnamo 4 May 2000	
 Yngvar Wallengren	

For receiving Office use only	
1. Date of actual receipt of the purported international application:	2000-05-05
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	2. Drawings: <input checked="" type="checkbox"/> received: <input type="checkbox"/> not received:
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
5. International Searching Authority (if two or more are competent): ISA/SE	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.

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Form PCT/RO/101 (last sheet) (July 1998; reprint January 2000) See Notes to the request form



2/2

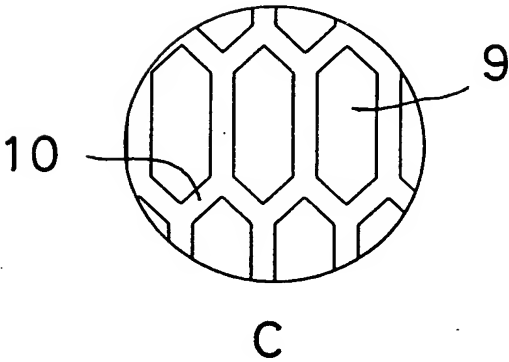
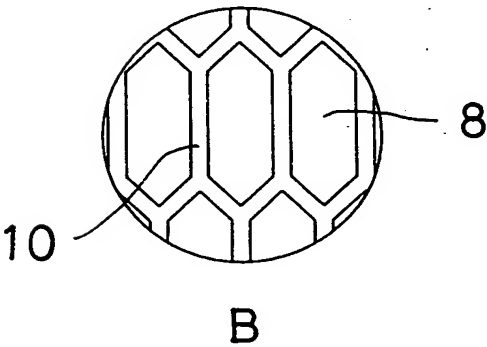
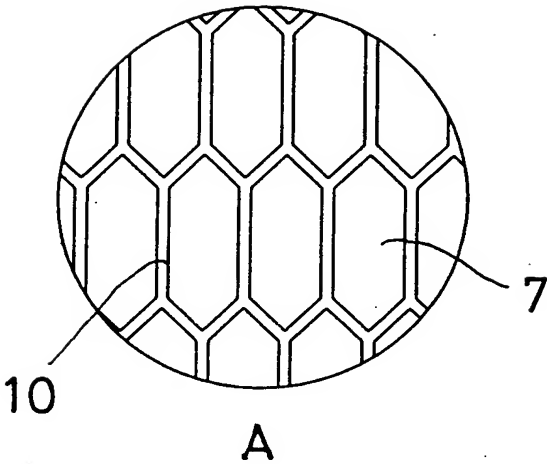


Fig 2

SKYDDSVISIR

TEKNISKT OMRÅDE

- 5 Den föreliggande uppfinningen avser ett skyddsvisir, som är framställt genom etsning av metall och som innefattar ett gallerverk, vilket begränsar ett stort antal ljusgenomsläppande hål.

ÄLDRE TEKNIK

10

Skyddsvisir för användning huvudsakligen inom skogsbruket är tidigare kända i många olika varianter och utföranden.

15

Skyddsvisir har såsom namnet antyder till ändamål att skydda bärarens ansikte men framför allt ögon utan att i någon nämnvärd mån inkräkta på sikten. Det är i huvudsak två riskmoment som skyddsvisiret skall minska eller helst eliminera helt. För det första skall skyddsvisiret stänga ute kringflygande skräp såsom damm, sågspån och liknande. För det andra skall skyddsvisiret skydda mot genomträngning av vassa föremål såsom mindre grenar, kvistar eller liknande. Kringflygande skräp kommer ofta snett underifrån medan där-
20 emot vassa föremål kan komma från vilken riktning som helst.

25

Det är tidigare känt skyddsvisir som består av glest vävda metalltrådar. Sådana skyddsvisir kan ge ett gott skydd mot kringflygande skräp om maskorna göres lämpligt små, medan däremot skyddet mot genomträngning av spetsiga eller vassa föremål är betydligt sämre eftersom de enskilda trådarna i skyddsvisiret glider i förhållande till varandra.

30

Det är också tidigare känt att framställa skyddsvisir genom tillämpning av ett etsningsförfarande på en metallplåt.

35

Oavsett om skyddsvisiret etsas eller väves i metall så hindrar det naturligtvis sikten hos bäraren mer eller mindre allvarligt. För att komma till rätta med detta problem har man såsom exempelvis visas i EP 689 812 tillverkat skyddsvisir av två olika material med ett centralt parti av visiret bildat av en
40 transparent siktskiva medan perifera delar består av ett vävt metallnät.

40

Den transparenta siktskivan ger god sikt så länge den är ny men repas snabbt och blir därmed försämrade. Vidare kan en siktskiva av den här använda typen ofta ställa till problem genom imbildning.

PROBLEMSTÄLLNING

Den föreliggande uppfinningen har till ändamål att så utforma det inledningsvis antydda visiret att nackdelarna hos äldre, känd teknik elimineras. Speciellt
5 avser uppfinningen att åstadkomma ett visir som ger maximalt ohindrad sikt inom de sektorer där detta är viktigast utan att för den skull den mekaniska hållfastheten försämras påtagligt eller genomsläppligheten för kringflygande skräp ökas markant.

10 PROBLEMLÖSNING

Den till grund för uppfinningen liggande målsättningen uppnås om det inledningsvis antydda skyddsvisiret kännetecknas av att det har minst två partier
15 vari hålen har olika area och/eller form.

Genom dessa särdrag kan skyddsvisiret ges en central zon, företrädesvis belägen mitt i visiret och vid dess övre del, där ljustransmissionen är större än i
resten av visiret. Under och på sidorna av denna zon har skyddsvisiret zoner
20 med mindre ljustransmission och därmed också bättre mekanisk hållfasthet och ökat skydd mot kringflygande skräp.

SAMMANSTÄLLNING ÖVER RITNINGSFIGURER

Uppfinningen skall nu beskrivas närmre under hänvisning till bifogade
25 ritningar. På dessa visar:

fig 1 den vänstra hälften av ett visir utfört enligt uppfinningen och

30 fig 2 olika delförstoringar A-C av olika partier av visiret i fig 1.

FÖREDRAGEN UTFÖRINGSFORM

I fig 1 visas vid den streckprickade linjen 1 en vertikal mittlinje till ett visir enligt uppfinningen. Detta innebär att den visade delen av visiret är den
35 vänstra hälften av visiret och att visiret därför har en höger hälft, som är en spegelbild av den visade delen.

Visiret är tillverkat genom ett etsningsförfarande i lämpligt plåtmaterial, exempelvis rostfritt. Genom etsningsförfarandet avlägsnas vissa delar av den
40 ursprungliga plåten så att det lämnas kvar ett galler verk vilket begränsar eller definierar ett stort antal ljusgenomsläppande hål i visiret.

- Visiret är utformat med ett övre mittparti 2 med en ljusgenomsläpplighet eller transmissionsförmåga på ca 80%. Detta övre mittparti sträcker sig från visirets övre kant 5 och nedåt till ungefär visirets halva höjd. I bredd-
5 riktningen täcker det ungefärligen halva visirets bredd. I den visade utföringsformen är det övre mittpartiet ungefärligen rektangulärt till formen, men kan också ha mera avrundade former.
- 10 Under och på sidorna om det övre mittpartiet befinner sig ett mellanparti 3 med en transmissionsförmåga på ca 70%. Vid visirets mittlinje 1 har detta mellanparti en höjd i storleksordningen $\frac{1}{4}$ av visirets totala höjd. Vidare sträcker det sig från de vertikala sidokanterna på det övre mittpartiet ungefärligen halvvägs ut mot visirets sidokanter 6.
- 15 Den kvarvarande delen av visiret, dvs dess sidokantområden och dess undre område bildar ett undre kantparti 4 med en transmissionsförmåga i storleksordningen ca 60%.
- 20 En stor transmissionsförmåga, såsom den som finns i det övre mittpartiet 2 innebär emellertid att den i gallret kvarvarande mängden material endast är 20% av den totala ytan. Härav följer att ett parti av visiret med så hög transmissionsförmåga kan bli mekaniskt svagare än vad som gäller det undre kantpartiet med en transmissionsförmåga i storleksordningen 60% där gallret utgör 40% av den ursprungliga plåten.
- 25 Genom placering av de olika partierna 2, 3 och 4 av visiret på det ovan beskrivna sättet relativt varandra fås ett centralt siktområde med god transmissionsförmåga och undre och sidobelägna områden med framför allt stor mekanisk hållfasthet och gott skydd mot kringflygande skräp och genomträngning.
- 30 I fig 2 visas detaljförstoringar av de i fig 1 visade områdena A, B och C. Av fig 2 framgår att hålen i de olika partierna 2, 3 resp 4 av visiret har samma form men olika storlek. Detta är åstadkommet genom att hålen 7, 8 och 9 har
35 samma avstånd centrum till centrum såväl i horisontell som i vertikal riktning. Resultatet härav blir det att de i gallerverket ingående stängerna, som alltså lämnas kvar vid etsningen av den ursprungliga plåten är olika breda i alternativen A, B och C.
- 40 Av fig 2 framgår vidare att hålen 7, 8 och 9 samtliga är sexkantiga till formen med betydligt mindre utsträckning i horisontell riktning än i vertikal riktning.

Hålen är därför högsnala, vilket visar sig ge stora fördelar genom minskade reflexer. Formen innebär också att slumpartat formade partiklar, som med slumpartad orientering träffar visiret har betydligt mindre möjlighet att komma igenom hålen vid samma storleksförhållande mellan partiklarna och
5 hålen än vad som skulle gälla om hålen hade samma breddutsträckning som höjdutsträckning vid bibehållen area, dvs vid samma transmissionsgrad.

I delfiguren A i fig 2 har i den visade utföringsformen hålet 7 en total höjdutsträckning på 4,0 mm och en total bredd på 1,5 mm. Motsvarande värden
10 för fig B är 3,82 mm och 1,38 mm. I alternativ C är höjden 3,65 mm medan bredden 1,25 mm. Bredden på de hålen definierande gallerstängerna är i alternativ A 0,25 mm, i alternativ B 0,38 mm och i alternativ C 0,5 mm.

Den ovan beskrivna konstruktionen av gallerverket och hålen 7, 8 och 9
15 saknar irregulariteter i gallerverket varigenom man icke behöver befara att gallerpartier med olika transmissionsförmåga icke "passar ihop" i gränsområdet. Vidare innebär den beskrivna konstruktionen att gränslinjen mellan områden med olika transmissionsförmåga kan formas på i princip godtyckligt sätt.

20

PATENTKRAV

1. Skyddsvisir framställt genom etsning av metall innefattande ett gallerverk, vilket begränsar ett stort antal ljusgenomsläppande hål (7, 8, 9), k ä n n e -
5 t e c k n a t därav, att skyddsvisiret har minst två partier (2, 3, 4) vari hålen (7, 8, 9) har olika area och/eller form.
2. Skyddsvisir enligt kravet 1, k ä n n e t e c k n a t därav, att det har ett
10 övre mittområde (2) med större ljustransmission än i övriga områden av skyddsvisiret.
3. Skyddsvisir enligt kravet 1, k ä n n e t e c k n a t därav, att det har ett
övre mittområde (2), ett omkring det övre mittområdet beläget mellanområde
15 (3) och ett omkring detta beläget undre kantområde (4) och att ljustransmissionen i det övre mittområdet är större än i mellanområdet där ljustransmissionen är större än i kantområdet.
4. Skyddsvisir enligt något av kraven 1-3, k ä n n e t e c k n a t därav, att
20 hålen (7, 8, 9) har samma C-C-avstånd i breddriktningen oavsett vari skyddsvisiret de är belägna.
5. Skyddsvisir enligt något av kraven 1-4, k ä n n e t e c k n a t därav, att
hålen (7, 8, 9) har samma C-C-avstånd i höjdriktningen oavsett var i skyddsvisiret de är belägna.
25
6. Skyddsvisir enligt något av kraven 1-5, k ä n n e t e c k n a t därav, att
hålen är sexkantiga med två ungefärligen parallella sidor längre än övriga
sidor, varvid de parallella sidorna är riktade i skyddsvisirets höjdriktning.

SAMMANDRAG

5 Ett skyddsvisir är framställt genom etsning av metall och innefattar ett galler-
verk, som begränsar ett stort antal ljusgenomsläppande hål (7, 8, 9). Skydds-
visiret har minst två partier (2, 3, 4) vari hålen (7, 8, 9) har olika area och/eller
form. Ett övre mittområde (2) har större ljustransmission än övriga områden
(3, 4) av skyddsvisiret. C-C-avstånden för hålen (7, 8, 9) är konstanta i såväl
höjd- som breddriktningen oberoende av i vilket parti av skyddsvisiret hålen
10 (7, 8, 9) befinner sig. I en föredragen utföringsform är hålen (7, 8, 9) sex-
kantiga, med två ungefärligen parallella sidor, som är längre än övriga sidor
och riktade i skyddsvisirets höjdriktning.

Fig 1

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/00892

A. CLASSIFICATION OF SUBJECT MATTER		
IPC7: A42B 3/22, A61F 9/04 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
IPC7: A42B, A61F		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
SE,DK,FI,NO classes as above		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 1959915 A (C.C. GUTHRIE), 22 May 1934 (22.05.34), page 2, line 36 - line 48; page 4, line 84 - line 92, figure 1, claim 1 --	1-6
X	FR 826990 A (A. ABPLANALP), 13 April 1938 (13.04.38), page 1, line 20 - line 50; page 2, line 22 - line 39 --	1,4-5
A	SE 506057 C2 (PELTOR AB), 3 November 1997 (03.11.97), figures 1-3, abstract --	1-6
A	EP 0689812 A2 (UVEX WINTER OPTIK GMBH), 3 January 1996 (03.01.96), the whole document --	1-6
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
23 August 2000		05-09-2000
Name and mailing address of the ISA: Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86		Authorized officer Anette Eriksson / MRo Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/00892

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SE 454237 B (ANDERZON INVEST AB), 18 April 1988 (18.04.88), the whole document --	1-6
A	US 5640711 A (Y. LEFORT ET AL), 24 June 1997 (24.06.97), abstract -- -----	2-3

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/SE 00/00892

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
US	1959915	A	22/05/34	NONE		
FR	826990	A	13/04/38	NONE		
SE	506057	C2	03/11/97	AU	5785996 A	29/11/96
				CA	2247181 A	28/08/97
				EP	0842218 A	20/05/98
				NO	974981 A	29/10/97
				NO	983682 A	19/10/98
				PL	323357 A	30/03/98
				SE	9600642 A	22/08/97
				WO	9730606 A	28/08/97
EP	0689812	A2	03/01/96	AU	2179295 A	18/01/96
				CA	2152845 A	31/12/95
				DE	9410596 U	25/08/94
				NO	952581 A	02/01/96
SE	454237	B	18/04/88	CA	1291595 A	05/11/91
				DE	3721699 A	14/01/88
				FI	872912 A	04/01/88
				NO	167626 B	19/08/91
				NO	872569 A	04/01/88
				SE	8602956 A	04/01/88
				US	4831665 A	23/05/89
US	5640711	A	24/06/97	CA	2137619 A	11/06/95
				DE	69418434 D,T	07/10/99
				EP	0657111 A,B	14/06/95
				SE	0657111 T3	
				ES	2132360 T	16/08/99
				FR	2713449 A,B	16/06/95
				IL	111726 A	10/06/97
				JP	7267194 A	17/10/95